

**UNITED STATES DISTRICT COURT
DISTRICT OF MINNESOTA**

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| IN RE NATIONAL HOCKEY LEAGUE |) | |
| PLAYERS CONCUSSION INJURY |) | MDL No. 14-2551 (SRN/BRT) |
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| This Document Relates to: |) | |
| ALL ACTIONS |) | |

**PLAINTIFFS’ MEMORANDUM IN SUPPORT OF MOTION TO
EXCLUDE DECLARATIONS OF DEFENDANT’S EXPERTS FOR
PURPOSES OF PLAINTIFFS’ MOTION FOR CLASS CERTIFICATION**

Plaintiffs submit this memorandum in support of their motion, pursuant to Fed R. Civ. P. 1 and Fed. R. Evid. 401 and 403, to exclude the declarations of certain experts submitted by Defendant National Hockey League (“NHL”) in opposition to Plaintiffs’ motion for class certification.

INTRODUCTION

Plaintiffs, a putative class of retired NHL hockey players, have moved for certification of a class of players with respect to claims for medical monitoring necessitated by the risks of later-life Neurological Diseases, Disorders, or Conditions (“NDDCs”) arising from brain trauma they suffered in NHL hockey. They also seek certification on discrete issues, including the NHL’s duty of care to the Plaintiffs, the scope of that duty including the duty to warn about the risks of NDDCs and head trauma, the NHL’s breach of that duty of care, and general causation. All of these issues, and their factual elements are common to the individual claims of players who have been diagnosed with neurological conditions and will be subject to common proof. Plaintiffs’

class motion is straightforward and does not involve a significant overlap with ultimate liability issues. Nevertheless, while Plaintiffs have limited themselves to submitting five expert declarations, Defendant has responded with gross overkill in the form of 19 duplicative expert declarations which primarily speak to the ultimate merits of the case.

Plaintiffs' class certification motion does not require resolution of the minutiae of specific neurological conditions and the cellular or physiological progression leading to them. Rather, it focuses on whether the *issue* as to whether former NHL players should receive medical monitoring is common to retired players. This *issue* is common whether the ultimate *answer* to it is yes or no. Yet the NHL submits 19 expert declarations focused on the ultimate answer, not whether that answer is susceptible to proof by evidence common to the class. To the extent the declarations can be deemed relevant to the general issue stated above, they are even more duplicative than they would be on the merits. The repetition underscores that the common questions will be answered by common proof generating common answers.

Plaintiffs have analyzed the 19 declarations and will set out below the issues they purport to address. The duplicative nature will be apparent from this discussion. Defendant should be required to choose *one* declaration on each of these issues. The duplicates are excludable because they are not only cumulative but also irrelevant to the motion for class certification.

STATEMENT OF FACTS¹

Two simple passages from Plaintiffs' class motion neatly frame the context of the instant motion. In the first, Plaintiffs summarize the common issues that they propose for purposes of Rule 23(a)(2):

- whether the NHL owed a duty of care to the Classes;
- whether the NHL's duty of care to the Classes included the duty to warn the Classes of, and protect them from, the long term health risks and consequences of concussive and subconcussive impacts;
- whether the NHL breached its duty to warn the Classes of, and protect them from, such risks and consequences;
- whether concussive and subconcussive impacts experienced in NHL hockey create a risk of, and can cause, long-term or permanent neurological damage, including the injuries claimed herein;
- whether medical monitoring and early detection will provide benefits to Class 1 members; and
- whether an epidemiological study using data from the medical monitoring will benefit Class 1 members.

Pl. Class Cert. Memo. (Dkt. 638) at 34. Perhaps foremost among these issues is “whether concussive and subconcussive impacts experienced in NHL hockey create a risk of or can cause, long term permanent neurological damage.” This issue only requires a comparatively simple level of detail, particularly at the class certification stage. As stated in the brief,

¹ The facts relevant to this motion are fully stated in the Memorandum of Law in Support of Plaintiffs' Motion for Class Certification and for Appointment of Class Representatives and Class Counsel (“Pl. Class Cert. Memo.”) and will only be set forth here in limited form that assumes familiarity with the class motion.

The medical and scientific community has known for over 100 years that repeated blows to the head can lead to NDDCs, even if the nomenclature or theorized cellular and subcellular effects on the brain evolved over the course of the NHL's existence.

Pl. Class Cert. Memo. at 13.

Against this backdrop, Defendant has submitted 19 expert declarations, at least 16 of which contain duplicative discussions of specific issues.

ARGUMENT

I. The Court Has Requested A Procedure To Treat Potentially Cumulative Expert Declarations.

At the May 12, 2017 status conference, Plaintiffs' counsel noted the excessive and duplicative nature of Defendant's 19 expert declarations submitted in opposition to Plaintiffs' motion for class certification. The Court summarized its thinking as follows:

[T]he Court does not need duplicative, cumulative opinions to make a decision about class certification. The Court needs all the opinions that are unique and relevant to class certification to consider in her rigorous analysis but doesn't need cumulative opinions... . The test is, one, are they relevant to the issue of class certification that a court is going to determine? And secondly, are they duplicative, are they cumulative, are they cumulative? And the Court has every right to strike any Declarations or Affidavits or whatever that accompanies a motion that is strictly cumulative.

5/12 Tr. at 32.

Under Fed. R. Evid. R. 403, evidence is excludable if its probative value is outweighed by needless presentation of cumulative evidence. Courts frequently have excluded expert reports as cumulative. *See, e.g. Finke v. Hunter's View, Ltd.*, 596 F. Supp. 2d 1254, 1261-64 (D. Minn. 2009) (excluding experts as duplicative on an issue-by-issue basis); *Upsher-Smith Laboratories, Inc. v. Mylan Laboratories, Inc.*, 944 F.

Supp. 1411, 1440 (D. Minn. 1996) (same). *See also Ackerman v. Coca-Cola Co.*, 2013 U.S. Dist. LEXIS 184232, *93-95 (E.D.N.Y. July 17, 2013) (on motion to certify all purchasers of brand of vitamin water alleged to be misleadingly labeled, expert reports opining as to consumers' understanding of features of such drinks and reasons for purchasing them were relevant to the merits rather than class certification and would not be considered).

In response to this mandate, Plaintiffs will delineate the duplicative portions of the specific expert declarations, showing why these opinions are irrelevant to the class certification motion.

II. The NHL Provides Duplicative Expert Declarations On Most Key Issues.

In reviewing the topics addressed by the NHL's 19 experts, Plaintiffs have identified 13 issues for which the NHL provided duplicative and redundant expert testimony for the purposes of imposing an undue burden on Plaintiffs. Summarizing this duplication in 19 Declarations covering hundreds of pages is difficult to do in a readily digestible fashion. However, those sections, and the experts that address them, are addressed by topic, with examples of duplicative testimony corresponding with each key topic.

1. The Lack of Causation from Case Studies

In their respective Declarations, Plaintiffs' experts Drs. Cantu² and Comstock³ discuss the clinical and epidemiological studies that support their positions that head

² Declaration of Robert C. Cantu, M.A., M.D., FACS, FAANS, FICS, FACSM ("Cantu Declaration"), Dkt. 646, §§IV.A.4-5; IV.B; IV.E.3; V.

trauma increases the likelihood of developing an NDDC. In response, the NHL has retained a whopping *eight* experts to opine on these topics. Each of those eight argues that the scientific literature cited by Plaintiffs' experts supports a finding that head trauma is *associated* with developing NDDCs – which Plaintiffs assert is all that is necessary for a duty to warn - but the scientific literature does not yet support a clearly defined *cause and effect* relationship.

a. Dr. Lisa A. Brenner

In Section II.A (page 21) of her Declaration,⁴ Dr. Brenner discusses “The Role Of Scientific Methods In Guiding Evidence-Based Medical Practice” and argues that the scientific literature cited by Plaintiffs and Plaintiffs' experts fails to reach the level of demonstrating causation, instead reaching only the level of showing an association between head trauma and NDDCs.

b. Dr. John David Cassidy

Dr. Cassidy, in Sections V, IX, and X (pages 15, 44, and 61, respectively) of his Declaration⁵ similarly opines on the “hierarchy” of scientific evidence, arguing that the studies cited by both Drs. Cantu and Comstock fail to reach a threshold that he finds critical. These Sections are titled “TYPES OF PEER-REVIEWED STUDIES AND THE

³ Declaration of R. Dawn Comstock, Ph.D (“Comstock Declaration”), Dkt. 642, §§V.F-V.H; *see also* Comstock Declaration ¶145 acknowledging that “the biggest advantage of prospective studies is the potential to definitively demonstrate causal associations.”

⁴ Declaration of Dr. Lisa A. Brenner (“Brenner Declaration”), Ex. A to the Declaration of John Beisner, Dkt. 732. All exhibits referenced hereafter are to the attachments to the Declaration of John Beisner, Dkt. 732.

⁵ Declaration of Dr. John David Cassidy (“Cassidy Declaration”), Ex. B.

HIERARCHY OF SCIENTIFIC EVIDENCE FOR ESTABLISHING CAUSATION,”
“THE STUDIES THAT DR. COMSTOCK RELIES UPON FOR HER OPINION THAT
CONCUSSIONS AND SUBCONCUSSIVE BLOWS CAUSE AN INCREASED RISK
OF LTNDS ARE NOT RELIABLE OR SUFFICIENT EVIDENCE OF CAUSATION,”
and “THE STUDIES THAT DR. CANTU RELIES UPON FOR HIS OPINION THAT
CONCUSSIONS AND SUBCONCUSSIVE BLOWS CAUSE AN INCREASED RISK
OF LTNDS ARE NOT RELIABLE OR SUFFICIENT EVIDENCE OF CAUSATION,”
respectively.

c. Dr. Rudolph Castellani

Dr. Castellani similarly opines on this matter in Section III.C (page 35) of his Declaration,⁶ titled “The Combined CTE Case Series Have Limited Value In Evidence-Based Medicine, Do Not Support Progressive Disease, And Cannot Address Causation,” and in Section VI (page 48), titled “CRITICAL UNANSWERED QUESTIONS REMAIN.” Both topics focus on the distinction between causation and association – a distinction with which Plaintiffs have no quarrel and that is ultimately a common defense to each class member’s claim.

⁶ Declaration of Dr. Rudolph Castellani (“Castellani Declaration”), Ex. C.

d. Dr. Kevin Guskiewicz

In a comparatively brief Declaration, Dr. Guskiewicz dedicates his entire Declaration⁷ to the topic of causation versus association in studies discussed by Drs. Cantu and Comstock.

e. Dr. Lili-Naz Hazrati

Next, Dr. Hazrati addresses the same topic in her Declaration⁸, arguing that head trauma does not have a clearly defined causal relationship with later NDDCs in the Section (page 9) titled “There is No Threshold of Exposure to Head Trauma That Correlates to Pathology.”

f. Dr. Grant L. Iverson

Dr. Iverson adds to this accumulation of expert testimony in his Declaration⁹ Section V.G (page 53), titled “Conclusions: Causation Issues Concerning CTE Remain Unresolved.”

g. Dr. Julie Ann Schneider

Next, Dr. Schneider opines on the very same issue of causation versus association in the Section (page 11) of her Declaration¹⁰ titled “Limitations Of The CTE Studies To Date.”

⁷ Declaration of Dr. Kevin Guskiewicz (“Guskiewicz Declaration”), Ex. G.

⁸ Declaration of Dr. Lili-Naz Hazrati (“Hazrati Declaration”), Ex. H.

⁹ Declaration of Dr. Grant Iverson (“Iverson Declaration”), Ex. I.

¹⁰ Declaration of Dr. Julie Ann Schneider (“Schneider Declaration”), Ex. T.

h. Dr. Kristine Yaffe

Finally, Dr. Yaffe adds to the duplicative testimony in Section D (page 9) of her Declaration,¹¹ titled “Understanding The Scientific Criteria For Establishing A Causal Relationship,” and Section G (page 27), titled “Chronic Traumatic Encephalopathy (‘CTE’).”

2. Uncertainty About the Pathology and Clinical Presentation of CTE

Dr. Cantu’s Declaration discusses the pathology and clinical presentation of CTE, and the tauopathies that form in the brain following exposure to head trauma.¹² In response, the NHL has retained *four* experts to argue that the pathology and clinical presentation of CTE is still unclear and that the NHL has no duty to warn NHL players about any NDDC until it is more certain that head trauma causes CTE.

a. Dr. Rudolph Castellani

Dr. Castellani dedicates a significant portion of his Declaration¹³ to this topic, in both Section III.A (page 22), titled “Clinical and Neuropathologic Criteria For CTE Have Changed Over Time,” and Section IV (page 44), bearing the title “THE CLINICAL SIGNIFICANCE OF TAU REMAINS UNCLEAR.”

¹¹ Declaration of Dr. Kristine Yaffe (“Yaffe Declaration”), Ex. U.

¹² Cantu Declaration §§ IV.A.4-5; IV.B; IV.E.3; V.

¹³ Castellani Declaration, *supra* n. 6.

b. Dr. Lili-Naz Hazrati

Next, Dr. Hazrati dedicates four Sections (pages 10, 17, 20, and 22, respectively) of her Declaration¹⁴ to this topic, bearing the titles “The Current State of Science is in its Infancy with Respect to CTE Tauopathy,” “The Absence of CTE Tauopathy in Athletes with a History of Concussion,” “The Presence of CTE Pathology in Individuals Without a History of Head Trauma,” and “Some Athletes Have Pathologies Consistent with Multiple NDs that are Common in the General Population.”

c. Dr. Julie Ann Schneider

Dr. Schneider also discusses this topic in her Declaration,¹⁵ in a Section (page 7) titled “Current Scientific Understanding Of CTE,” where she argues that the current understanding of CTE is too limited to trigger a duty to warn or protect NHL players.

d. Dr. Kristine Yaffe

Lastly, Dr. Yaffe opines on this matter in Section G (page 27) of her Declaration,¹⁶ bearing the title “Chronic Traumatic Encephalopathy (CTE).”

3. Appropriate Concussion Terminology

In his Declaration, Plaintiffs’ Expert Dr. Stephen Casper discussed the methodology underlying his historic review at length, including his decision to treat the terminology surrounding head trauma to be fairly consistent during the course of his

¹⁴ Hazrati Declaration, *supra* n. 8.

¹⁵ Schneider Declaration, *supra* n. 10.

¹⁶ Yaffe Declaration, *supra* n. 11.

historic review.¹⁷ Substituting redundancy for reason, the NHL retained *three* experts to opine virtually identically that Dr. Casper’s analysis is erroneous.

a. Dr. Lisa A. Brenner

In Dr. Brenner’s Declaration,¹⁸ both Sections II.B (page 23), titled “The Evolution Of The Term “Concussion” And Knowledge Regarding Acute And Post-Concussive Symptoms,” and II.C. (page 32), titled “The Evolution Of Diagnosis And Treatment Of TBI” address this topic.

b. Dr. Grant L. Iverson

From Dr. Iverson’s Declaration,¹⁹ both Sections IV.A (page 13), titled “Scientific Understanding Regarding the Definition and Diagnosis of Concussion has Evolved Considerably,” and IV.B. (page 19), titled “Evolution Regarding the Management of Sports-Related Concussion” address this topic in a substantially identical manner.

c. Dr. Douglas B. McKeag

From Dr. McKeag’s Declaration,²⁰ Section C (page 4), titled “The Evolving Definition And Management Of Concussion,” addresses this topic in a substantially identical manner.

¹⁷ See Declaration of Stephen T. Casper, Ph.D. (“Casper Declaration”), Dkt. 644, § V.C.1.

¹⁸ Brenner Declaration, *supra* n. 4.

¹⁹ Iverson Declaration, *supra* n. 9.

²⁰ Declaration of Dr. Douglas McKeag (“McKeag Declaration”), Ex. L.

4. The Role of Sports Medicine and Influence from Industry

In his Declaration, Dr. Casper discussed his observation that the introduction of “sports medicine” as a specific specialty of medicine resulted in a bifurcation of concussion research and increased pressure from industry (in this case, sports leagues) on head trauma researchers.²¹ The NHL has nevertheless retained *three* experts to testify – irrelevantly for class certification purposes - that the sporting industry has no influence whatsoever on sports medicine, ignoring instances such as the NHL’s own demonstrated aversion to funding research into risks of head trauma in favor of more palatable topics,²² or the NFL’s infamous efforts to downplay the risks of head trauma through disgraced doctor Elliot Pellman.²³

a. Dr. Lisa A. Brenner

In Section II.E (page 42) of Dr. Brenner’s Declaration²⁴, with the self-explanatory title “Professor Casper’s Baseless Criticisms Of Sports Medicine,” Dr. Brenner attacks Dr. Casper’s statements about the influence of the sports industry on sports medicine.

b. Dr. Paul R. McCrory

Dr. McCrory, in a Section (page 16) of his Declaration²⁵ titled “Mr.[sic] Casper’s Mischaracterization Of The History And Benefit Of Research Specific To Concussions In

²¹ See, e.g., Casper Declaration ¶105.

²² NHL2110271.

²³ See, e.g., Belson, K., *N.F.L. Doctor Who Discounted Dangers of Head Trauma Retires*, NEW YORK TIMES (July 20, 2016), <https://www.nytimes.com/2016/07/21/sports/football/nfl-doctor-elliott-pellman-concussions-retires.html>.

²⁴ Brenner Declaration, *supra* n. 4.

Sport,” Dr. McCrory attacks Dr. Casper’s statements about the influence of the sports industry on sports medicine in a substantially identical manner.

c. Dr. Douglas B. McKeag

Dr. McKeag joins the above experts in their efforts to discredit Dr. Casper, in his Declaration²⁶ Section D (page 14) stating “SPORTS MEDICINE HAS NOT BEEN CAPTURED BY INDUSTRY AND INSTITUTIONAL INTERESTS.”

5. Changes in Historic Knowledge of CTE

Dr. Casper opines about the connection between dementia pugilistica to present-day chronic traumatic encephalopathy, a topic key to establishing the NHL’s knowledge of the risks associated with head trauma, or what the NHL should have known. In response, the NHL offers *four* experts to argue that blows to the head in hockey – including bare knuckled punches -- are either unique injuries unrelated to boxing or to simply argue that, because more research on CTE would provide greater understanding of CTE, it *must* be unrelated to the dementia pugilistica condition documented and discussed for nearly 100 years.

a. Dr. Rudolph Castellani

Dr. Castellani, in Section III.A.2 (page 26) of his Declaration,²⁷ discusses how “Dementia Pugilistica Pathology Continues To Evolve” and thus cannot be related to CTE, despite the fact that the same neurofibrillary tangles and clinical syndromes were

²⁵ Declaration of Dr. Paul R. McCrory (“McCrory Declaration”), Ex. K.

²⁶ McKeag Declaration, *supra* n. 20.

²⁷ Castellani Declaration, *supra* n. 6.

observed by both Harrison Martland, author of the seminal 1928 work “Punch Drunk,” and modern CTE researchers.²⁸

b. Dr. Grant L. Iverson

Dr. Iverson adds to this analysis in Section V.B (page 33) of his Declaration,²⁹ titled “CTE: Historical Background to the Present,” which presents an alternative historic timeline of CTE research to contradict Dr. Casper’s Declaration.

c. Dr. Paul R. McCrory

Dr. McCrory, in a Section (page 45) of his Declaration³⁰ titled “Mr. [sic] Casper’s Misunderstanding Of What Is Known About CTE,” similarly attacks the same portions of Dr. Casper’s Declaration and testimony.

d. Dr. Kristine Yaffe

Dr. Yaffe, in Section H (page 33) of her Declaration³¹ titled “Dr. Casper’s Opinions About The History Of Scientific Knowledge Regarding Head Trauma And Neurodegenerative Disease,” similarly presents an alternative historic timeline of scientific study of CTE to contradict Dr. Casper’s Declaration.

²⁸ Deposition Transcript of Robert C. Cantu, M.D., Feb. 23, 2017 at 511:16 – 512:9.

²⁹ Iverson Declaration, *supra* n. 9.

³⁰ McCrory Declaration, *supra* n. 25.

³¹ Cassidy Declaration, *supra* n. 5.

6. Changes in Historic Knowledge of Neurological Diseases, Disorders, or Conditions

In addition to discussion about CTE, Dr. Casper also reviewed discussion in the historic record related to NDDCs other than CTE. In similar fashion, the NHL has retained multiple experts to opine on this issue to contradict Dr. Casper's historic record.

a. Dr. Lisa A. Brenner

Dr. Brenner addresses this topic in Section II.D (page 36) of her Declaration, titled "Lack Of Data In Support Of A Link Between mTBI And LTND," which argues both that there is no historic support for any link between head trauma and NDDCs, and that there is little-to-no evidence of that link in modern times.

b. Dr. John David Cassidy

Dr. Cassidy dedicates multiple Sections of his Declaration to this issue, Sections VI-VIII (pages 32, 37, and 42, respectively), discussing "THE STATE OF THE RELIABLE SCIENTIFIC EVIDENCE CONNECTING REPETITIVE HEAD TRAUMA TO LTNDs AS OF 2001 . . . 2012 . . . [and] FROM 2012 TO THE PRESENT," addressing the same topics as Dr. Brenner in a substantially identical manner.

7. Medical Ethics and a Duty to Warn

In the concluding Section of his Declaration, Dr. Casper discusses how a doctor's duty to warn and inform patients interacts with the duty to be informed of medical advances, and how that relates to his observations in the historic record.³² This drew the indignation of *three* of the NHL's experts, who testified on this narrow subject.

³² Casper Declaration ¶¶ 280-281.

a. Dr. Grant L. Iverson

In Section X (page 69) of his Declaration,³³ Dr. Iverson discusses a doctor's duty to warn patients of long-term dangers related to head trauma, opining that no such duty exists in the Section titled "CLINICAL ADVICE IN THE FACE OF LIMITED SCIENTIFIC EVIDENCE."

b. Dr. Douglas B. McKeag

In Section E (page 15) of Dr. McKeag's Declaration,³⁴ with the self-explanatory title "PHYSICIANS ARE NOT UNDER AN ETHICAL OBLIGATION TO WARN OF DEVELOPING SCIENCE AND WERE NOT SPECIFICALLY REQUIRED TO WARN OF THE LONG-TERM RISKS OF REPEATED SPORTS CONCUSSIONS AS OF 1975," Dr. McKeag opines on the same topic and arguments as Dr. Iverson, stating that no such duty to warn exists either now, or in the past.

c. Dr. C. Warren Olanow

Lastly, Dr. Olanow addresses this very topic in Section IV (page 42) of his Supplemental Declaration,³⁵ angrily arguing that no duty to warn about the dangers of head trauma has accrued, and that "Mr. Casper's Suggestion That Physicians Violated The Hippocratic Oath By Failing To Warn Of Unproven Risks Of Head Injuries Is An Affront To The Medical Community."

³³ Iverson Declaration, *supra* n. 9.

³⁴ McKeag Declaration, *supra* n. 20.

³⁵ Supplemental Declaration of Dr. C. Warren Olanow ("Olanow Declaration"), Ex. O.

8. The Use of Finite Element Models

Dr. Hoshizaki's Declaration³⁶ primarily focuses on the use of his lab's injury and accident recreation equipment to simulate impacts that occurred in a survey of NHL hockey games, which would then be processed with a finite-element model to simulate how those injuries and impacts would affect the human brain. In response, the NHL retained multiple experts to criticize the use of the finite-element model.

a. Dr. Matthew Panzer

Dr. Panzer's Declaration³⁷ is focused entirely on potential sources of error and inaccuracy in Dr. Hoshizaki's selected the finite-element model.

b. Dr. James R. Funk

Despite the fact that Dr. Panzer was retained for the exclusive purpose of criticizing Dr. Hoshizaki's selection of finite-element models, Dr. Funk nevertheless dedicates a significant portion of his Declaration³⁸ – paragraphs 34-40 – to the identical issues raised by Dr. Panzer.

9. Video Analysis Reliability

In order to receive the data inputs to use the finite-element model, Dr. Hoshizaki discussed how he used specialized software to analyze hockey videos and determine the type and velocity of various head impacts for later simulation in his lab. Despite the

³⁶ See generally Declaration of Thomas Blaine Hoshizaki, Ph.D. ("Hoshizaki Declaration"), Dkt. 645.

³⁷ Declaration of Dr. Matthew Panzer, Ex. Q.

³⁸ Declaration of Dr. James R. Funk ("Funk Declaration"), Ex. F.

narrow focus of this topic, the NHL nevertheless retained two experts to opine that the video analysis was inaccurate.

a. Mr. William Neale

Mr. Neale's entire Declaration³⁹ is focused on the accuracy of Dr. Hoshizaki's video analysis portion of his expert opinion.

b. Dr. James Funk

Despite acknowledging that Mr. Neale opined on the issue at length in Paragraph 15, Dr. Funk continues to dedicate a Section of his Declaration,⁴⁰ covered in paragraphs 13-18, on the purported inaccuracies in Dr. Hoshizaki's video analysis.

10. Minimum Strain Thresholds to Cause Cellular Changes

In the background to his aforementioned impact simulation opinion, Dr. Hoshizaki opined on the levels of maximum principal strain ("MPS") which can cause cellular changes in the brain.⁴¹ This informed Dr. Hoshizaki's opinion as to which of the observed head impacts were potentially injurious, as opposed to – hopefully – benign. In response, the NHL retained *three* experts to argue that these figures were either incorrect, or unknown.

³⁹ Declaration of William Neale ("Neale Declaration"), Ex. M.

⁴⁰ Funk Declaration, *supra* n. 38.

⁴¹ Hoshizaki Declaration § IV.B.

a. Dr. James R. Funk

Dr. Funk dedicated paragraphs 41-54 of his Declaration⁴² – nearly 40% of his substantive discussion – on the topic of MPS thresholds and their ability to reflect harm to the brain.

b. Dr. C. Warren Olanow

Dr. Olanow also opines on this topic in paragraphs 72 and 73 of his Supplemental Declaration,⁴³ arguing similarly that the MPS thresholds discussed by Dr. Hoshizaki are incorrect.

c. Dr. Julie Ann Schneider

Lastly, Dr. Schneider joins Drs. Olanow and Funk in opining in near-identical fashion – in paragraphs 61 and 62 of her Declaration⁴⁴ –that the MPS figures discussed by Dr. Hoshizaki are incorrect or speculative.

11. Minimum-Maximum Principle Strain Thresholds to Affect NDDC Risk

Relatedly, Dr. Hoshizaki further opined about the reported levels of maximum principle strain which can cause permanent changes to the brain, and how these permanent changes would in turn affect the risk of later-life diagnosis with an NDDC.⁴⁵ Once again, the NHL has retained *three* experts to opine on this very subject.

⁴² Funk Declaration, *supra* n. 38.

⁴³ Olanow Declaration, *supra* n. 35.

⁴⁴ Schneider Declaration, *supra* n. 10.

⁴⁵ Hoshizaki Declaration § IV.C.

a. Dr. C. Warren Olanow

Dr. Olanow also opined on this topic in his Supplemental Declaration,⁴⁶ dedicating paragraphs 74-82 on this topic and stating that Dr. Hoshizaki's opinions about the relationship between the cellular damage caused by head trauma and later-life impairment remains speculative.

b. Dr. Christopher Randolph

Similarly, Dr. Randolph uses paragraphs 25(d)(v) through 25(d)(vii) of his Declaration⁴⁷ to address this same topic, arguing once again that Dr. Hoshizaki's discussion about the relationship between the cellular damage caused by head trauma and later-life impairment remains speculative.

c. Dr. Julie Ann Schneider

Lastly, Dr. Schneider joins Drs. Olanow and Randolph in opining in near-identical fashion – in paragraphs 61 and 62 of her Declaration⁴⁸ – that the MPS figures discussed by Dr. Hoshizaki are incorrect or speculative.

12. Unrelated Factors that Result in NDDCs

Dr. Cantu,⁴⁹ and to a lesser extent, Dr. Comstock,⁵⁰ acknowledge some of the known co-morbidities of NDDCs. This prompted the NHL to proffer *five* experts to

⁴⁶ Olanow Declaration, *supra* n. 35.

⁴⁷ Declaration of Dr. Christopher Randolph (“Randolph Declaration”), Ex. R.

⁴⁸ Schneider Declaration, *supra* n. 10.

⁴⁹ Cantu Declaration ¶ 133 (noting that smoking or alcohol use are potential comorbidities of NDDCs that would be addressed in a medical monitoring program).

opine on all of the alternative causes for NDDCs other than head trauma, arguing that the relationship between head trauma and later-life impairment is so rife with confounding factors that no duty to warn could accrue, or that if such a duty exists, the NHL could not have breached that duty by failing to warn or protect the class.

a. Dr. Lili-Naz Hazrati

In two separate Sections (pages 26 and 32, respectively) in her Declaration,⁵¹ titled “There are Many Potential Causes of Tauopathies in the Brains of Athletes” and “Alternative Causes of CTE Tauopathy,” Dr. Hazrati discusses various confounding factors and alternative causes for the NDDCs discussed by Plaintiffs.

b. Dr. Jennifer Finkel

Dr. Finkel, in paragraphs 15-18 of her Supplemental Declaration,⁵² makes substantially identical arguments about the confounding factors and alternative causes for the NDDCs discussed by Plaintiffs.

c. Dr. Grant Iverson

Similarly, Dr. Iverson, in Section V.F (page 49) of his Declaration,⁵³ titled “The Proposed Symptoms of CTE are ‘Nonspecific,’ Which is a Critical Scientific Problem,”

⁵⁰ Comstock Declaration ¶¶ 89 (discussing a Taiwanese study that controlled for variables that could affect NDDC diagnosis, such as substance abuse and cardiac conditions); 97 (noting the “association between concussion and depression was independent of the association between physical health deficits and depression”).

⁵¹ Hazrati Declaration, *supra* n. 8.

⁵² Supplemental Declaration of Dr. Jennifer Finkel (“Finkel Declaration”), Ex. D.

⁵³ Iverson Declaration, *supra* n. 9.

and makes substantially identical arguments about the confounding factors and alternative causes for the NDDCs discussed by Plaintiffs.

d. Dr. Julie A. Schneider

Dr. Schneider, in a Section (page 24) of her Declaration⁵⁴ titled “Difficulties In Differentiating CTE From Other Diseases And In Isolating Head Trauma As The Cause Of Disease,” makes substantially identical arguments about the confounding factors and alternative causes for the NDDCs discussed by Plaintiffs.

e. Dr. Kristine Yaffe

Lastly, Dr. Yaffe makes substantially identical arguments in her Declaration⁵⁵ in Section E (page 13), titled “Head Trauma And Other Potential Risk Factors For Neurodegenerative Disease” and Section F (page 16), titled “Various Risk Factors Are Associated With Different Neurodegenerative Diseases.”

13. The Benefits and Drawbacks of Medical Monitoring

Drs. Cantu⁵⁶ and Comstock⁵⁷ opine on separate aspects of the proposed medical monitoring remedy for the class of retired NHL players who were exposed to head trauma, but have not been diagnosed with an NDDC. Dr. Cantu opines on the diagnostic aspects of medical monitoring and how that may aid in the care and treatment of class members, while Dr. Comstock opines on the invaluable opportunity to use the medical

⁵⁴ Schneider Declaration, *supra* n. 10.

⁵⁵ Yaffe Declaration, *supra* n. 11.

⁵⁶ Cantu Declaration § VI.

⁵⁷ Comstock Declaration § VI.

monitoring program as a research tool to aid both current and past NHL players in obtaining greater information about their risk for NDDCs. In response, the NHL proffered *four* experts to argue that the medical monitoring program is redundant, iatrogenic, or simply improper.

a. Dr. Jennifer Finkel

Dr. Finkel spends almost the entirety of her Supplemental Declaration,⁵⁸ in paragraphs 23-60, arguing that the medical monitoring program Dr. Cantu described would be either ineffective or harmful, ostensibly causing class members to abandon self-care or neglect treatment of other conditions due to the belief that the medical monitoring tests would – somehow – convince them that all of their health problems are related solely to head trauma. Dr. Finkel closes by arguing that the medical monitoring program could also drive class members to depression or increase anxiety due to uncertainty regarding the very health issues that the medical monitoring program could ameliorate.

b. Dr. C. Warren Olanow

In Section III (page 33) of his Supplemental Declaration,⁵⁹ Dr. Olanow discusses how “The Medical-Monitoring Program Proposed By Plaintiffs’ Expert Dr. Cantu Is Not Necessary, Nor Would It Be Beneficial For Retired NHL Players,” and mirrors the arguments of Dr. Finkel that medical monitoring would be – at best – redundant and otherwise potentially harmful for class members.

⁵⁸ Finkel Declaration, *supra* n. 52.

⁵⁹ Olanow Declaration, *supra* n. 35.

c. Dr. Christopher Randolph

Dr. Randolph joins the other NHL experts in arguing that there is “no justification for [medical] monitoring” and provides no benefits to the class in Paragraph 26 of his Declaration,⁶⁰ and then argues in Paragraph 27 that the epidemiological benefits of medical monitoring would be unreliable and should be prevented.

d. Dr. John David Cassidy

In Section XI (page 69) of his Declaration,⁶¹ Dr. Cassidy discusses “IATROGENIC RISK FROM THE ONGOING PUBLICITY ABOUT THE LONG TERM EFFECTS OF CONCUSSIONS AND SUBCONCUSSIVE BLOWS” and argues that the publicity surrounding the risks of head trauma may harm Plaintiffs, ostensibly arguing that informing them of potential NDDC risks would cause them to malingering or become suicidal, and could discourage youths from playing contact sports and increase childhood obesity. This argument parallels those of Drs. Olanow and Finkel, who also claims that testing for various NDDCs could harm class members, implying that they would benefit more from an absence of such diagnostic care.

III. The NHL’s Expert Opinions Go Beyond the More Generalized Issues that Will Determine Class Certification and Are Not Relevant to the Class Motion.

As discussed in connection with the motion for class certification, it is not necessary at this stage – or any stage – for Plaintiffs to demonstrate a proven causal link between head trauma in NHL games and neurological conditions. Rather, Plaintiffs need

⁶⁰ Randolph Declaration, *supra* n. 47.

⁶¹ Cassidy Declaration, *supra* n. 5.

only show that the answer to the common question of whether the head trauma from typical NHL play warrants medical monitoring is common to former players. Hence, the merits-based minutiae embodied in the NHL's expert opinions – relating to proof of causation of specific ailments – is irrelevant for certification purposes. The declarations of Brenner, Cassidy, Castellani, Guskiewicz, Hazrati, Iverson, Schneider and Yaffe discussed above all fall into this category. Put simpler, if *none* of those experts opined on this topic, the class certification analysis would be materially identical. Such opinions should be struck.

The issue of relevancy is essentially derivative of the issue of duplication in the current context. Opinions regarding cell progression, white matter damage and different neurological conditions, while not necessarily duplicative or irrelevant to the NHL's merits defense, , only speak to a single more generalized issue described above on a class motion and are needlessly cumulative.

CONCLUSION

For the reasons stated herein, the Court should determine that the NHL's expert declarations on the 13 issues set forth above are cumulative or not relevant in the context of a motion for class certification, require the NHL to designate one expert on each of those issues that is appropriate for class certification, and exclude such portions of the NHL's expert reports that do not fall within those parameters.

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